

REMARKS/ARGUMENTS

Favorable reconsideration of this application as presently amended and in light of the following discussion is respectfully requested.

Claims 8-12, 20-24 and 34-36 are pending in the present application. Claims 8, 12, 20, 24, 34 and 36 are amended by the present response. Claims 1-7, 13-19 and 31-33 are withdrawn. Support for amendments to the claims can be found in the disclosure as originally filed. For example, support is found, at least, in paragraphs 0079, 0133, 0146 and 0151 of the published application. Thus, no new matter is added.

In the outstanding Action, Claims 8, 9, 11, 12, 20, 21, 23, 24 and 34-36 were rejected under 35 U.S.C. §102(b) as anticipated by Fukuhara et al. (JP 2000-197052, herein “Fukuhara”); and Claims 10 and 22 were rejected under 35 U.S.C. §103(a) as unpatentable over Fukuhara in view of Koyama et al. (U.S. Pat. No. 6,765,510, herein “Koyama”).

Addressing now the rejection of Claims 8, 9, 11, 12, 20, 21, 24, 28-30 and 34-36 as anticipated by Fukuhara, Applicants respectfully traverse this rejection in light of the amendment to Claims 8, 12, 20, 24, 34 and 36.

Claim 8 recites,

A decoding method of decoding, using a decoding apparatus having a processor, coded data with a resolution of N/M times (M and N are integers, and $1 \leq N < M$ and $M > 2$) that of an original image, the decoding method comprising:

a decoding step of receiving the coded data that are encoded by decomposing the original image into M uniform subbands using an analysis filter bank that includes M filters of the same bandwidth and M $1/M$ -times downsampling units, extracting N signals from decomposed signals from a low frequency side, and decoding, using the decoding apparatus, the N signals by using an entropy decoding method; and

a bandwidth synthesizing step of synthesizing the N signals, that are decoded to obtain an image of the resolution of N/M times that of the original image, by using a synthesizing filter bank that includes N N -times upsampling units and N filters of the same bandwidth.

Claims 20 and 34 recite corresponding apparatus and computer readable medium claims.

Fukuhara describes a general wavelet transform method which splits bands as shown in Figure 3.¹ Further, Fukuhara describes uniform subbands in Figure 5 and paragraph 0026.²

However, Fukuhara does not describe or suggest receiving the coded data that are encoded by decomposing the original image into M uniform subbands using an analysis filter bank that includes M filters of the same bandwidth and M 1/M-times downsampling units or synthesizing the N signals, that are decoded to obtain an image of the resolution of N/M times that of the original image, by using a synthesizing filter bank that includes N N-times upsampling unit and N filters of the same bandwidth.

The outstanding Action asserts that paragraphs 0012 and 0021 of Fukuhara disclose the step of receiving the coded data. However, nothing in these portions or any other portion of Fukuhara discloses receiving the coded data that are encoded by decomposing the original image into M uniform subbands ***using an analysis filter bank that includes M filters of the same bandwidth and M 1/M-times downsampling units.***

In addition, the outstanding Action asserts on page 3 that “Fukuhara discloses the synthesizing the N signals that are decoded to obtain an image of 1 over 2 to the power of n.” In response, Applicants have amended Claim 8 to clarify that the N signals that are decoded to obtain an image of the resolution of N/M times that of the original image are synthesized by using a synthesizing filter bank that includes N N-times upsampling units and N filters of the same bandwidth. Fukuhara never discloses this feature of the claimed invention.

Thus, Applicants respectfully submit that Claim 8, and similarly Claims 20 and 34, and claims depending respectively therefrom, patentably distinguish over Fukuhara.

¹ See paragraph 0021 of Fukuhara (corresponding to paragraph 0045 of Fukuhara et al. (U.S. Pat. Pub. No. 2003/0198394).)

² See paragraph 0051 of Fukuhara et al. (U.S. Pat. Pub. No. 2003/0198394).

With regard to Claim 12, Applicants respectfully submit that this claim also patentably distinguishes over the cited Fukuhara reference.

Claim 12 recites,

A decoding method of decoding, using a decoding apparatus having a processor, coded data with a resolution of N/M times (M and N are integers, and $1 \leq N < M$ and $M > 2$) that of an original image, the decoding method comprising:

a decoding step of receiving the coded data that are encoded by decomposing the original image into M coefficients of frequency components using $M \times M$ order DCT, extracting N signals from decomposed signals from a low frequency component side, and decoding, using the decoding apparatus, the N signals by using an entropy decoding method; and

a bandwidth synthesizing step of synthesizing the N signals, that are decoded to obtain an image of the resolution of N/M times that of the original image, by using $N \times N$ order IDCT.

Claims 24 and 36 recite corresponding apparatus and computer readable medium claims.

As is noted above, Fukuhara describes a general wavelet transform method which splits bands.

However, Fukuhara does not describe or suggest receiving the coded data that are encoded by decomposing the original image into M coefficients of frequency components using $M \times M$ order DCT or synthesizing the N signals, that are decoded to obtain an image of the resolution of N/M times that of the original image, by using $N \times N$ order IDCT.

Similarly to the features noted above with regard to Claim 8, Fukuhara never discloses the features of Claim 12 with regard to the decomposing of the original image and the synthesizing of the N signals. Specifically, nothing in Fukuhara discloses decomposing the original image into M coefficients of frequency components using $M \times M$ order DCT or synthesizing the N signals by using $N \times N$ order IDCT.

Thus, Applicants respectfully submit that Claim 12, and similarly Claims 24 and 36, and claims depending therefrom, patentably distinguish over Fukuhara.

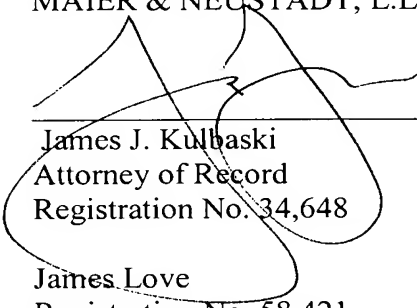
Moreover, the further cited Koyama reference does not cure the above noted deficiencies of Fukuhara with regard to the claimed invention.

Consequently, for the reasons discussed in detail above, no further issues are believed to be outstanding in the present application, and the present application is believed to be in condition for formal allowance. Therefore, a Notice of Allowance is earnestly solicited.

Should the Examiner deem that any further action is necessary to place this application in even better form for allowance, the Examiner is encouraged to contact the undersigned representative at the below listed telephone number.

Respectfully submitted,

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